27. The PD-organoid of claim **22**, further comprising one or more or all of the following cell types:

a. basal cells, characterised by P63 and CK5 expression;

b. goblet cells, characterised by MUC5AC expression; and

c. club cells characterised by lack of CC10 and SCGB3A2 expression.

28. The PD-organoid of claim **22**, wherein gene expression is assessed using quantitative PCR of mRNA transcripts normalised with GAPDH; and/or (b) the PD-organoid further comprises an influenza virus.

29. (canceled)

30. (canceled)

31. A method for contracting an influenza virus in a PD-organoid, wherein the method comprises:

a. generating a PD-organoid in accordance with claim **1**; and

b. infecting the PD-organoid with an influenza virus.

32. The method of claim **31**, wherein: (a) the infecting step comprises inoculating with the influenza virus at a multiplicity of infection of at least 0.001, at least 0.01 or between 0.001 and 0.01; (b) the infecting step further comprising incubating for at least 30 minutes, at least 60 minutes, at least 90 minutes or at least 120 minutes; (c) the contacting step is at the apical surface of the PD-organoid; (c) the PD-organoid is a 2D organoid and contacting step involves adding the influenza virus to the apical chamber of the transwell culture system or (d) the PD-organoid is a 3D organoid and the method further comprises a step of exposing the apical surface of the 3D organoid, for example by mechanical shearing, prior to contacting the PD-organoid with an influenza virus.

33. (canceled)

34. The method of claim **32**, wherein the incubating step is performed at about 37° C.; or the method further comprises re-contacting the 3D organoid with an extracellular matrix and culturing the PD-organoid in a proximal differentiation medium, after infecting, and optionally incubating, the PD-organoid with the influenza virus.

35. (canceled)

36. (canceled)

37. (canceled)

38. (canceled)

39. A method for predicting infectivity of a test influenza virus to humans, wherein the method comprises:

a. generating a human PD-organoid in accordance with claim **1**;

b. contacting the human PD-organoid with the test influenza virus;

c. testing the viral titre after a time period sufficient to allow viral propagation;

d. optionally comparing the viral titre to a control influenza virus.

40. The method of claim **39**, wherein: (a) testing the viral titre involves detecting a change in viral titre; (b) the control influenza virus is a known poorly-infective-to-humans influenza virus, optionally wherein the change in viral titre of the test influenza virus is greater than the change in viral titre of the known poorly-infective-to-humans influenza virus, for example wherein the viral titre is at least 10-fold, at least 50-fold, at least 100-fold, at least 1,000 fold or at least 10,000 fold greater than the viral titre of the known poorly-infective-to-humans influenza virus; or (c) the control influenza virus is a known infective-to-humans influenza virus, optionally wherein the change viral titre of the test influenza virus is about the same or greater than the viral titre of the known infective-to-humans influenza virus, for example, at least 75%, at least 80%, at least 90%, at least 100%, at least 150%, at least 2-fold, at least 5-fold or at least 10-fold relative to the viral titre of the known infective-to-humans influenza virus.

41. The method of claim **40**, wherein an increase in viral titre is indicative of likely infectivity of the influenza virus to humans and/or wherein a greater increase over a shorter time period is correlated with a higher degree of infectivity and optionally, wherein the increase in viral titre is at least 1 login units, at least 2 $\log_{10}$ units, or at least 3 $\log_{10}$ units within 24 hours.

42. (canceled)

43. (canceled)

44. The method of claim **41**, wherein the known poorly-infective influenza virus is selected from H7N2, H9N2 and H9N9.

45. (canceled)

46. (canceled)

47. The method or PD-organoid of claim **1**, wherein the influenza virus is:

a. an influenza A virus;

b. a human, avian or swine influenza virus; and/or

c. an emerging influenza virus.

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